

REMARKS

Reconsideration and further examination of the subject patent application in light of the present Amendment and Remarks is respectfully requested.

Introductory Remarks Regarding The Claims

Claims 1-12 are currently pending in the application and stand rejected. Claim 8 has been cancelled.

Rejection Under 35 U.S.C. §112

Claims 1, 8 and 10 are objected to and further, claims 1-6, and 8-12 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, as set forth in pages 2-3 of the Office Action. In view of claims as presently amended, applicant respectfully traverses this rejection. The claims have been amended to provide proper antecedent basis, correct minor typographical errors, and to render the claims more definite.

Rejection Under 35 U.S.C. §103

The claims stand rejected under 35 U.S.C. §103 as being unpatentable over the primary reference to Sakamoto in view of various combinations of the secondary references to Eversole, Japanese reference '604, Wang, Santa Cruz and Fridd, as set forth on pages 3-9 of the Office Action. In view of the claims as presently amended, applicant respectfully traverses this rejection.

Claims 1-6 stand rejected under 35 U.S.C. §103 as being unpatentable over Sakamoto in view of Eversole. In view of the claims as amended, applicant respectfully traverses this rejection. Claim 1 has been amended to include the limitation of a ring-like metal foil insert placed between the lower end surface of the tubular tine member and the proximal end surface of

the metal tip in a plane perpendicular to the axial direction of the tine member for connecting the tubular tine member with the metal tip by brazing.

The ring-like foil insert 12 acts like a buffer layer between the tubular tine member 11, which is typically made of carbon steel, and the metal tip 13, which is typically made of tungsten carbide. (Page 8, lines 25-27). The insert increases the durability of the device and operates to reduce stress and prevent cracks that might otherwise occur during the brazing process due to thermal expansion coefficients. (Page 8, lines 27-30).

Additionally, as claimed, the ring-like insert is disposed in a plane perpendicular to the axial direction of the device. This is an important consideration during use of the device when vertical force is applied to the tine member during penetration of the soil. Because the ring-like insert is flat and perpendicular to the axis of the force applied, all of the force exerted against the insert by the tip and tine is evenly distributed about the entire surface of the insert. Clearly, the present invention is directed to a very sturdy and long lasting device and is specifically designed to resist wear and tear in a harsh environment. In other tine or turf aeration devices that are not so sturdy, the solution is frequent replacement of the device.

Sakamoto discloses a tine device for an aeration machine having a tubular body with a tapered tip. The reference discloses that tip has a circular edge 11a formed by thinning the forefront portion of a pipe material. Col. 3, lines 30-35. It appears that the tip and the pipe are a one-piece construction. In that regard, the device Sakamoto is primarily directed to a tine that is quickly and easily replaceable. It is not directed to a long lasting and wear-resistant tine assembly. As set forth in Sakamoto, "since changing of the tine may be performed by means of the coupler with a simple motion, it is possible to greatly improve the work efficiency as a whole including the changing

operation of the tine." Col 2, lines 13-18. It is clear that Sakamoto is directed to increasing the efficiency of replacing spent or damaged tines rather than to a long lasting and wear-resistant device.

Eversole discloses a tine device for use in aerating grassy areas, and appears to be directed to a connection method between the tubular member and the tip, and to increase the life of the tubular member. This is done by using a tip having a greater diameter than the body such that a taper 36 on the tip engages a taper 38 on the lower end of the tubular member. Col. 2, lines 22-25. Eversole states that "[b]y making the hard tip to a larger diameter than the lowermost end of the tine, the tine is protected from the abrasive effects of the earth and wears away extremely slowly." Col. 2, lines 32-38.

Neither Sakamoto nor Eversole disclose a ring-like metal foil insert placed between the lower end surface of the tubular tine member and the proximal end surface of the metal tip in a plane perpendicular to the axial direction of the tine member for connecting the tubular tine member with the metal tip by brazing. Both references are complexly devoid of such a teaching, and there is no suggestion or motivation to include such a feature in either of the devices.

Because Sakamoto is directed to a replaceable device and appears to be of a one-piece construction (except for the quick connection pieces on the upper portion), there would not be any need for a ring-like foil metal insert. Moreover, use of a metal ring between the tip and the body in Sakamoto would be impossible due to its one-piece construction, meaning the one-piece tip and body. Thus, the primary reference essentially teaches away from using a metal insert to facilitate joining the tip and the tine member because there is no separate tip in Sakamoto.

The secondary reference to Eversole, although disclosing a separate tip, does not teach, disclose or suggest using a ring-like metal insert between the two components. Eversole merely

discloses attaching the tip to the tine by brazing, epoxy or cement. Col. 2, lines 22-26. There is no suggestion or motivation in either reference, taken separately or together, to use a ring-like metal insert between the tip and the tine. This is especially true because neither reference even remotely mentions use of such an insert, and where the primary reference to Sakamoto could not even accommodate such a component due to its one-piece construction.

With respect to dependent claim 9, which as been renumbered to depend from claim 1, Wang does not disclose, teach or suggest a ring-like foil insert disposed in a plane perpendicular to the axis of the device. Wang is directed to a method of joining ceramic composite bodies. In applicant's claimed invention, the ring-like foil insert essentially transfers force from the tine into the tip. Because the insert is flat and disposed in a plane perpendicular to the axis of the tine, the force exerted on the flat ring-like insert is evenly distributed. If the foil insert were to be tapered or the angle between the tip and the tine were anything but perpendicular, the vertical force transmitted to the tip from the tine or body may not be transmitted evenly. If this were the case, the foil insert may shift position over time due to the repeated striking impact of the device, which would adversely affect the performance and lifetime of the device. Accordingly, applicant submits that claim 9 is not obvious over Sakamoto, Eversol, and Wang.

As the Examiner is aware, it is impermissible to combine the teaching of prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. In re Fritch, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992). The Examiner cannot pick and choose features from the prior art to recreate the claimed invention in hindsight without some teaching or suggestion in the references to support use of the particular claimed combination. Smithkline Diagnostics Inc., v. Helena Laboratories Corp., 8 U.S.P.Q.2d 1468, 1475 (Fed. Cir. 1988).

Accordingly, applicant submits that neither Sakamotor nor Eversole, take alone or in combination, renders applicant's claimed invention obvious. Applicant submits that claim 1 is not obvious in light of the cited references, and thus is allowable, and that dependent claims 1-7 and 9 are allowable as depending from an allowable base claim.

Claims 10 and 11 stand rejected under 35 U.S.C. §103 as being unpatentable over Sakamoto in view of Eversole and Fridd or Santa Cruz. In view of the claims as amended, applicant respectfully traverses this rejection.

Independent claim 10 has been amended to include the added limitations of claim 1, namely, a ring-like metal foil insert placed between the lower end surface of the tubular tine member and the proximal end surface of the metal tip in a plane perpendicular to the axial direction of the tine member for connecting the tubular tine member with the metal tip by brazing. Accordingly, applicant reasserts the above arguments in support of patentability of claims 1-7 and 9 with respect to claims 10-12.

Applicant submits that neither Fridd nor Santa Cruz add any additional teaching above what is disclosed in Sakamoto and Eversole, and in fact, are even less related to applicant's invention than are Sakamoto and Eversole. Accordingly, applicant submits that neither Sakamotor, Eversole, Fridd, nor Santa Cruz take alone or in combination, render applicant's claimed invention obvious. Applicant submits that claim 10 is not obvious in light of the cited references, and thus is allowable, and that dependent claims 11 and 12 are allowable as depending from an allowable base claim.

Closing Remarks

The art made of record by the Examiner but not relied upon as a basis of rejection, does not, whether taken alone or in combination with Sakamoto and/or the secondary references, anticipate or

render obvious any of applicant's claims as now amended in the application.

For the foregoing reasons, applicant submits that the subject application is in condition for allowance and earnestly solicits an early Notice of Allowance. Should the Examiner be of the opinion that a telephone conference would expedite prosecution of the subject application, the Examiner is respectfully requested to call the undersigned at the below-listed number.

The Commissioner is hereby authorized to charge any additional fee which may be required for this application under 37 C.F.R. §§ 1.16-1.18, including but not limited to the issue fee, or credit any overpayment, to Deposit Account No. 23-0920. Should no proper amount be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 23-0920.

Respectfully submitted,

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